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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/847,776 | 05/02/2001 | Erik R. Altman | YOR920010367 | 6685 |
| 7590 | 12/04/2006 | | EXAMINER | |
| David Aker 23 Southern Road Hartsdale, NY 10530 | | | | PAN, DANIEL H |
| | | ART UNIT | PAPER NUMBER | 2183 |

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|---------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/847,776 | ALTMAN ET AL. |
| | Examiner | Art Unit |
| | Daniel Pan | 2183 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 19 September 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-20 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 02 May 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

1. Claims 1-20 are presented for examination.
2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. Fu et al. (6,381,678) has been introduced to show the teaching of examination a tag without a cache fetch. However, response to applicant's remarks based regarding "101" and the prior art of record will be included in this action below .

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The reasons are given below.
4. As to claim 1, No physical transformation can be found in the claim. No substantial practical application can be found in the claim. Although claim recites translating the instruction and branching to the translated code, no substantial practical application can be found in the claim. Therefore, it is not useful. It is not tangible because translating the instruction and branching to the translated version is an abstract idea. It is not concrete because it is not sure what the operation will be if the associated tag ahs not been set, hence not predictable.
5. As to the applicant's remarks that execution of a computer program is exact type of useful, concrete, and tangible result, the applicant is reminded that the focus is not on the feature taken to achieve a final result which is of useful, concrete, and

not on the feature taken to achieve a final result which is of useful, concrete, and tangible result, but rather than a final result achieved which is of useful, concrete, and tangible result (see page 20 of 101 Interim Guidelines). No final result of the execution of the program can be found in the claim. Furthermore, no substantial practical application can be found in the claim for examining the tag without the cache fetch. Therefore, it is non-statutory.

6. As to claim 11, similar analysis in claim 1 can be done to claim 11 to show claim 11 is directed to non-statutory subject matter.
7. As to claims 2,12, the looking up of the address is not tangible.
8. As to claims 3,13, no substantial practical application can be found in the claim by just determining and examining the tag.
9. As to claims 4,14, although claim 4 recites the translated version stored in cache, no function of the translated version (translated code) to impart the function of the cache can be found. Therefore, is directed to non statutory subject.
10. As to claims 5,6,15,16, see analysis to claim 4.
11. As to claims 7, 8,9, 17,18, neither single bit nor multiple bits in memory is directed to functional descriptive material.
12. As to claim 10,19,20, although claim 10 recite executing the instruction, no substantial practical application can be found for executing the instruction.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bala (6,351,844) in view of Fu et al. (6,381,678).

14. As to claims 1 ,9, 11, 12, 19, Bala taught a system included a dynamic compilation capability comprising at least :

- a) translating an instruction from a first representation (non-native code) to a translated representation (native code) , and setting a tag (see hit) associated with the instruction in the first representation (see col.1, lines 30-47);

- b) prior to execution of a given instruction (see translation occurred before outputting the native code for execution in col.1, lines 35-38) in the first representation, examining the tag (hit) associated with the given instruction, and if such associated tag has been set (hit) , branching to the translated version of the given instruction (see the reading of the translated code in the cache memory instead of using the interpreter in col.1, lines 30-62, see also the branch , see also the suspension of the interpreter at hit in col.3, lines 18-30).

15. As to the newly amended feature of examining the tag without a cache fetch, Bala did not specifically teach the examining his tag (the hit) without a cache fetch as claimed. However, Fu taught a system for examining a tag (see hit/miss) without a cache fetch (see the step without converting the hit request to prefetch in fig.4B [235] , see the prefetch is useless with a cache hit in col.5, lines 64-67, col.6, lines 1-12). It would have been obvious to one of ordinary skill in the art to use Fu in Bala for examining the tag without a cache fetch as claimed because the use of Fu could provide Bala the ability to accept a predefined set of request based on the given set of tags, thereby reducing the overall number of the fetching cycles, and it could be readily achieved by configuring the cache request of Fu into Bala with modified read/write parameter so that the specific tag of Fu could be recognized by Bala, and because Bala also disclosed a circular buffer could be used for analyzing the traces (see col.6, lines 14-20), which was a suggestion of the need for providing the tag without a cache fetch in order to minimize the access latency, in doing so, provided a motivation.

16. As to claims 2, 12, Bala also included the address of the translated version of instructions (see the start address in col.3, lines 1-13).

17. As to claims 3, 13, Bala also determined if subsequent instruction existed by examining the tag (see the hit signal in col.3, lines 20-30).

18. As to claims 3,14, see translated code cache in fig.1 [50].

19. As to claims 5,15, see the optimized code replacing the non-optimized code in col.1, lines 10-23.

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20. As to claims 6,16, see native code.
21. As to claims 7,17, Bala's tag was also a single bit (see the hit signal).
22. As to claims 8,18, Bala's tag was also multiple bits (see the profile information in col.1, lines 63-67, see also the trace entry 242 of multiple bits in col.7, lines 29-35).
23. As to claim 10,20, see the continuing of the interpreter operation for the given instruction upon miss in col.3, lines 20-30 .

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

24. Bala (6,351,844) was cited in the previous office action on 01/15/06.

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, and cited in the previous office action on 01/15/06.

- a) Leblanc et al. (4,809,170) is cited for the teaching of the cache memory storing the translated code with associated tag (see fig.3 [28] [46][48], col.col.10, lines 2-15, col.8, lines 35-68, col.9, lines 1-6);
- b) Itou et al. (6,292,939) is cited for tag associated with a translated source file (see col.9, lines 26-55).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pan whose telephone number is 703 305 9696, or the new number 571 272 4172. The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan, can be reached on 703 305 9712, or the new number 571 272 4162. The fax phone number for the organization where this application or proceeding is assigned is 703 306 5404.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private

DANIEL H. PAN
PRIMARY EXAMINER
GROUP